IN THE CLAIMS:

1-4. (Canceled)

5. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein amino acids located in at least two beta strands of at least two beta sheets of the protein are mutagenized.

6. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein amino acids located in three beta strands of two antiparallel beta sheets of the protein are mutagenized.

7. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein the protein is a vertebrate gamma-crystallin.

8. (Canceled)

9. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein the protein is a gamma-II-crystallin.

10. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein an amino acid located within the protein is mutagenized in a region of the beta sheet that is accessible to a solvent.

11. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein an amino acid is mutagenized in a region of the protein selected from the group consisting of a β-sheet structure of a domain of the protein and a β-sheet structure of a subunit of the protein.

12. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim 9, wherein at least one of the amino acids Lys 3, Thr 5, Tyr 7, Cys 16, Glu 18, Ser 20, Arg 37, and Asp 39 of a bovine gamma-II-crystallin of SEQ ID NO: 22 is mutagenized.

13. (Canceled)

14. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein the new antigen binding specificity is for a compound selected from the group consisting of estradiol and BSA-β-estradiol-17-hemisuccinate.

15. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein the protein has a new antigen binding specificity for a compound selected from the group consisting of estradiol and BSA-β-estradiol-17-hemisuccinate, and wherein the protein has an amino acid sequence comprising one of SEQ ID NO: 19 and SEQ ID NO: 21.

16. (Currently amended) A composition comprising the mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42 and at least one other protein or non-protein substance.

17-25. (Canceled)

26. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim 7, wherein the vertebrate is selected from the group consisting of a bovine, a rodent, a bird, and a fish.

27. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein an amino acid of the protein is mutagenized in a region of the beta sheet that is accessible to a binding partner.

28. (Currently amended) The mutagenized gamma-crystallin polypeptide ~~protein~~ of claim [[1]] 42, wherein an amino acid is mutagenized in a β-sheet structure of a subunit of the protein.

29-41. (Canceled)

42. (Currently amended) A mutagenized gamma-crystallin polypeptide with ~~antibody-like~~ a new binding activity towards a binding partner, wherein amino acids on a surface of the gamma-crystallin polypeptide ~~located in at least two β-strands of a least one beta-sheet~~ are mutagenized, and further wherein ~~having the following locations~~:

- the amino acids that are mutagenized are located in two, three, or for beta-strands of at least one beta-sheet of said gamma-crystallin polypeptide;
- said beta-sheet, said beta-strands, and said amino acids are located on a surface of said ~~protein~~ gamma-crystallin polypeptide; and~~, wherein~~
- the mutagenizing is selected from the group consisting of an insertion, a deletion, a substitution, and combinations thereof, such that the

mutagenized gamma-crystallin polypeptide has a new ~~antibody-like antigen~~ binding activity towards a binding partner ~~specificity~~, with the proviso that[[:]]

~~(i)~~ the gamma-crystallin polypeptide without substitution, deletion, insertion, or combinations thereof has no binding activity at the surface of the beta-sheet structure wherein the amino acids are mutagenized, and after substitution, deletion, insertion, or combinations thereof at the surface of the beta-sheet structure, the gamma-crystallin polypeptide has a new ~~antibody-like antigen~~ binding activity towards a binding partner. ~~specificity; or~~

~~(ii) the gamma-crystallin polypeptide has a binding activity before the substitution, deletion, insertion, or combinations thereof and that after the substitution, deletion, or insertion at the surface of the beta-sheet structure, the gamma-crystallin polypeptide has an additional new or an improved antibody-like binding activity.~~

43-46. (Canceled)

Please add the following new claim:

47. (New) A mutagenized gamma-crystallin polypeptide with beta-sheet structure and a new binding activity towards a binding partner, wherein amino acids on a surface of a gamma-crystallin polypeptide are mutagenized, and further wherein:

- the amino acids that are mutagenized are located in two, three, or four beta-strands of at least one beta-sheet of said gamma-crystallin polypeptide with beta-sheet structure;
- said beta sheet, said beta-strands, and said amino acids are located on a surface of said gamma-crystallin polypeptide;
- the mutagenizing is selected from the group consisting of an insertion, a deletion, a substitution, and combinations thereof, such that the

mutagenized gamma-crystallin polypeptide has a new binding activity towards a binding partner, with the proviso that the gamma-crystallin polypeptide without substitution, deletion, insertion, or combinations thereof has no binding activity at the surface of the beta-sheet structure wherein the amino acids are mutagenized, and after substitution, deletion, insertion, or combinations thereof at the surface of the beta-sheet structure, the mutagenized gamma-crystallin polypeptide has a new binding activity towards a binding partner; and

- said mutagenized gamma-crystallin polypeptide is prepared by a method comprising:
  - (a) selecting a gamma-crystallin polypeptide;
  - (b) selecting a binding partner of the gamma-crystallin polypeptide;
  - (c) mutagenizing a nucleic acid molecule encoding amino acids on a surface of the gamma-crystallin polypeptide, wherein:
    - (i) said amino acids to be mutagenized being located in two, three, or four beta-strands of at least one beta-sheet of said gamma-crystallin polypeptide;
    - (ii) said beta-sheet, said beta-strands, and said amino acids are located on a surface of said gamma-crystallin polypeptide; and
    - (iii) the mutagenizing is selected from the group consisting of an insertion, a deletion, a substitution, and combinations thereof;
  - (d) expressing the mutagenized nucleic acid molecule of step (c) in order to produce the mutagenized gamma-crystallin polypeptide;
  - (e) contacting the mutagenized gamma-crystallin polypeptide with said binding partner of step (b); and
  - (f) selecting and isolating a mutagenized gamma-crystallin polypeptide with a new binding activity towards the binding partner of step (b).